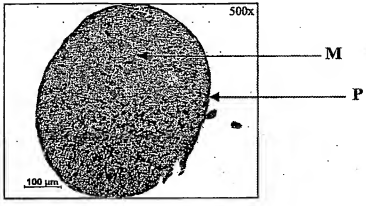


Fig. 1: Histology of *in vitro*-produced, three-dimensional intervertebral disk cartilage tissues. Vital differentiated cells having developed an extracellular matrix (ECM) are situated inside the tissues. A proliferation zone (P) is situated at the periphery.

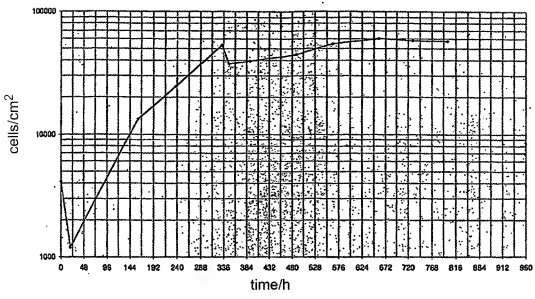
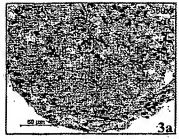
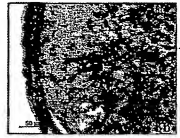
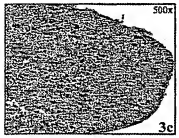
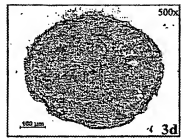


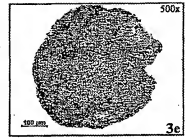
Fig.2: Proliferation of intervertebral disk cells in mixed culture in the monolayer passage 2.











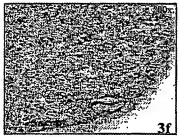


Fig. 3: Expression of matrix proteins by intervertebral disk cartilage mixed cells following growth in monolayer culture and subsequent culturing under three-dimensional cell culturing conditions. (3a) Expression of aggregan after 4 weeks. (3b) Expression of hyalin-specific proteoglycans detected by means of Safranin O staining after 4 weeks. (3c) Expression of type I collagen after 2 weeks. (3d) Expression of type II collagen after 4 weeks. (3e) Expression of type III collagen after 4 weeks.

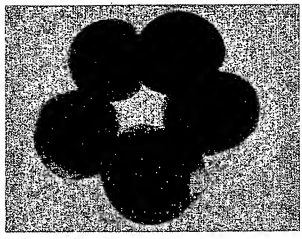


Fig. 4: Five fusing three-dimensional intervertebral disk cartilage tissues.

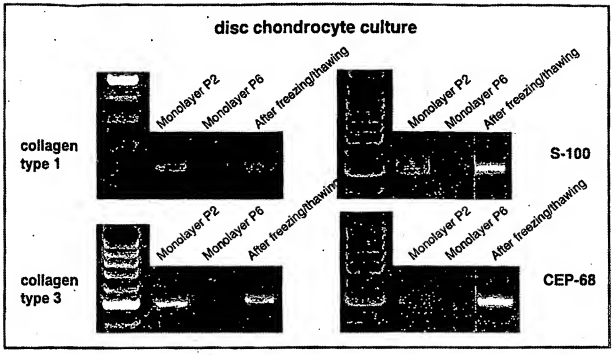


Fig. 5: Expression of different matrix and regulative proteins by disc derived chondrocytes cultured in monolayer for different passages and cultured in monolayer after freezing and thawing of cells. Monolayer passage 2 (P2), Monolayer passage 6 (P6), after freezing and thawing (after freezing/thawing).